



To: Bill Schenk, Trevor Watson

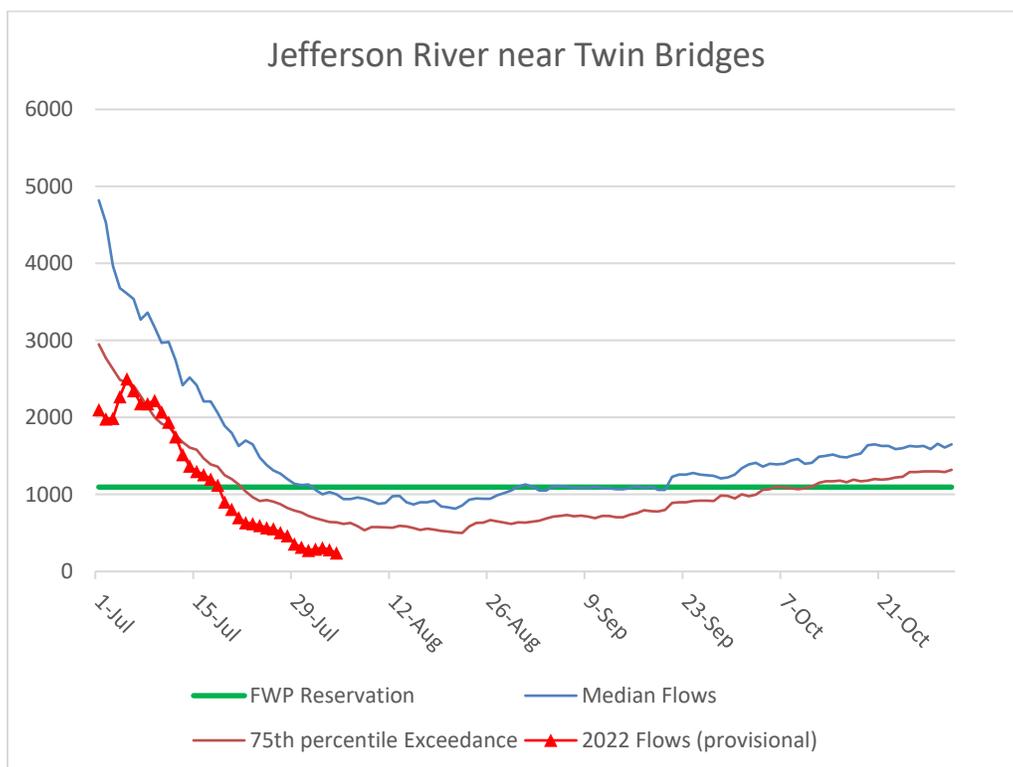
C: Marina Yoshioka, Jim Olsen, Amy Groen, Andy Brummond

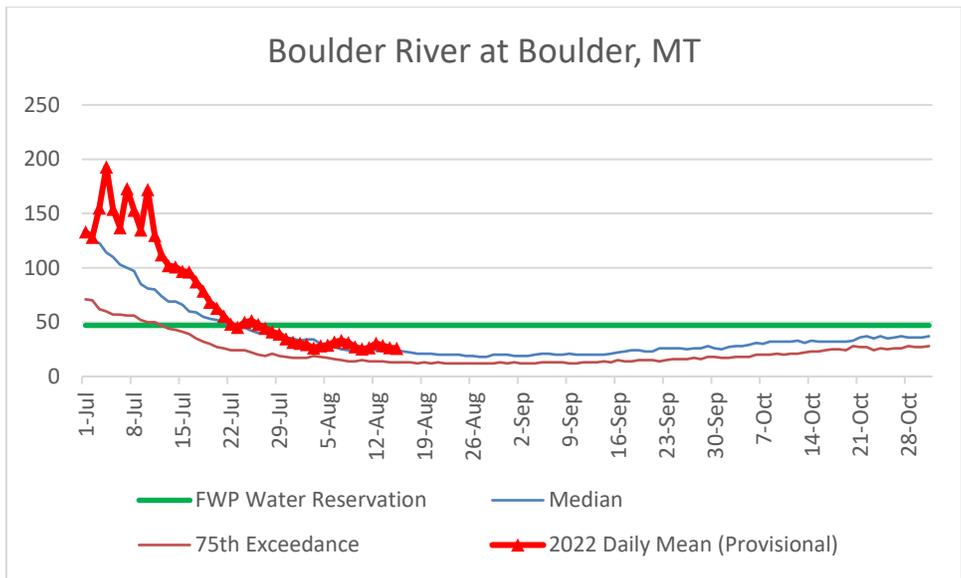
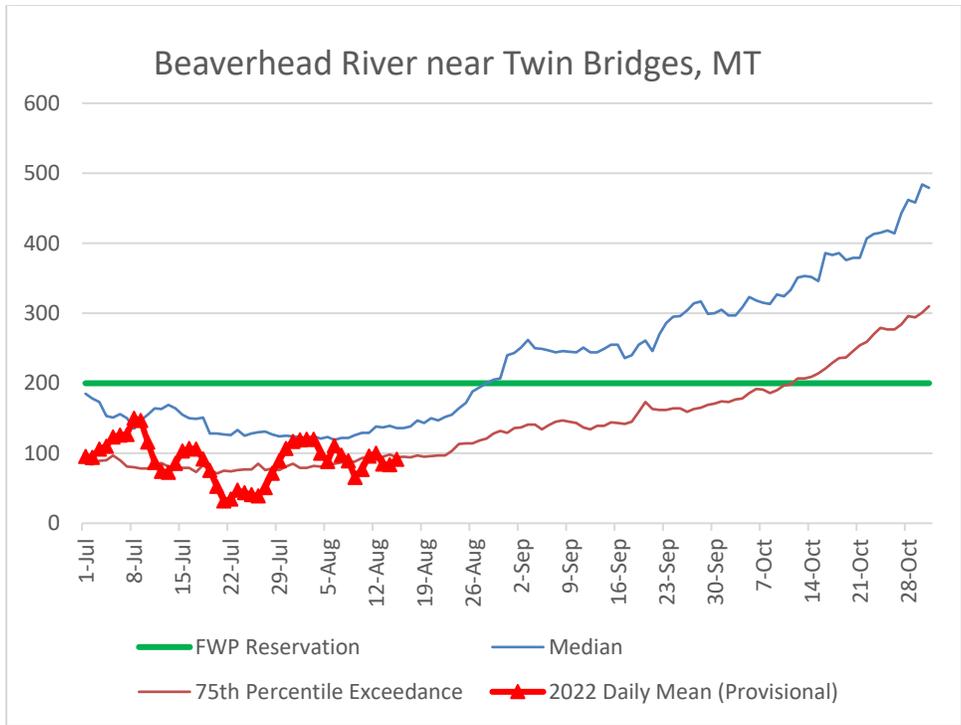
From: Stephen Begley, FWP Water Program
Ron Spoon Upper Missouri/Jefferson River Area Fisheries Management Biologist
Matt Jeager, Fisheries Management Biologist

Date: August 16, 2022

Subject: Jefferson River and Tributaries – Call on Junior Water Rights

Fisheries and Water Program staff have monitored flow and water temperature in the Jefferson River and its tributaries and consulted on river conditions and potential merits of placing call on junior water uses. We jointly recommend that FWP make call on the Jefferson River, Beaverhead River, and Boulder River. Stream flow in the Jefferson River and these tributaries has dropped well below FWP’s instream water reservation. The series of hydrographs below shows that flow is below the 75th percentile exceedance flow (level met or exceeded 3 out of 4 years) for the following USGS stream gages: Jefferson River near Twin Bridges, MT (82-year period of record) and Beaverhead River near Twin Bridges, MT (87 year period-of-record). Flows in the Boulder River are below FWP’s Instream Water Reservation, but are tracking close to the median. The Boulder River gage is located above many of the large irrigation diversions.

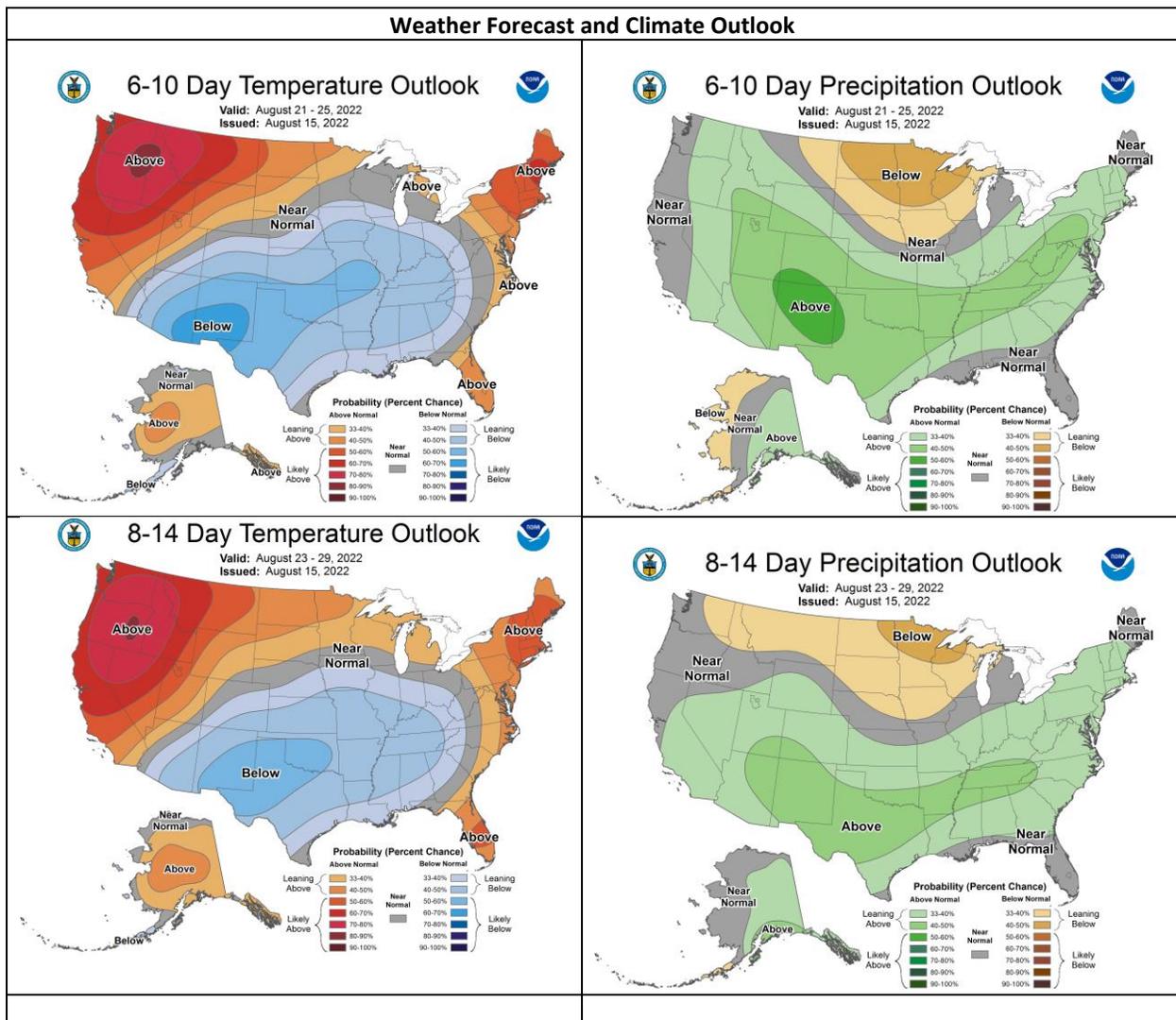




Other tributaries to the Jefferson River were assessed prior to compiling this memo. Flows in the Ruby River are about 12 cfs above FWP’s Water Reservation, while flows in the Big Hole River are below FWP’s Water Reservation. Given there is an active drought plan in the Big Hole

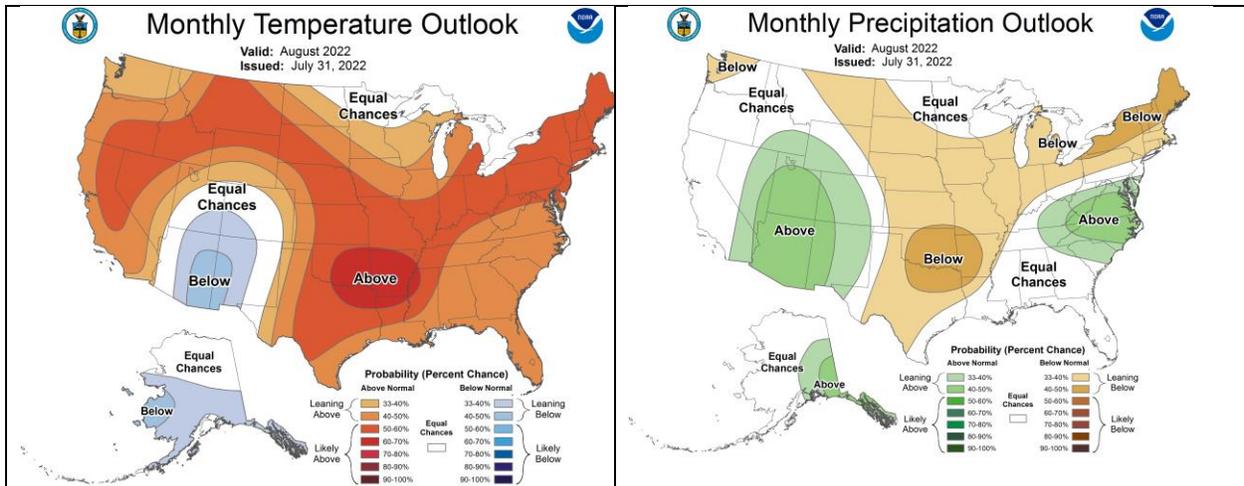
River, and there is some concern about the benefit of an FWP call, it was decided that FWP would forgo making a call on the Big Hole this season.^{1,2}

The 6-10- precipitation outlooks lean towards above normal precipitation while the 8-14 day and monthly outlook leans towards below normal precipitation overall for the month (graphics attached). However, normal precipitation for this time of year is relatively light overall so increased chances of precipitation do not necessarily translate to improved stream flow. Temperatures for all three reporting periods point toward above normal temperatures. Given expected weather conditions and high demand for irrigation water, streamflow would not be expected to again meet FWP’s instream flow rights into the fall without significant precipitation events.



¹ FWP corresponded with Big Hole Watershed Committee on benefit of call on 8/1. FWP provided BHWC with a list to review.

² On 8/11 Jim Olson, the Big Hole Area Fish Biologist issued a correspondence where he stated a concern about making a call and its impact to voluntary drought plan efforts in the Big Hole River.

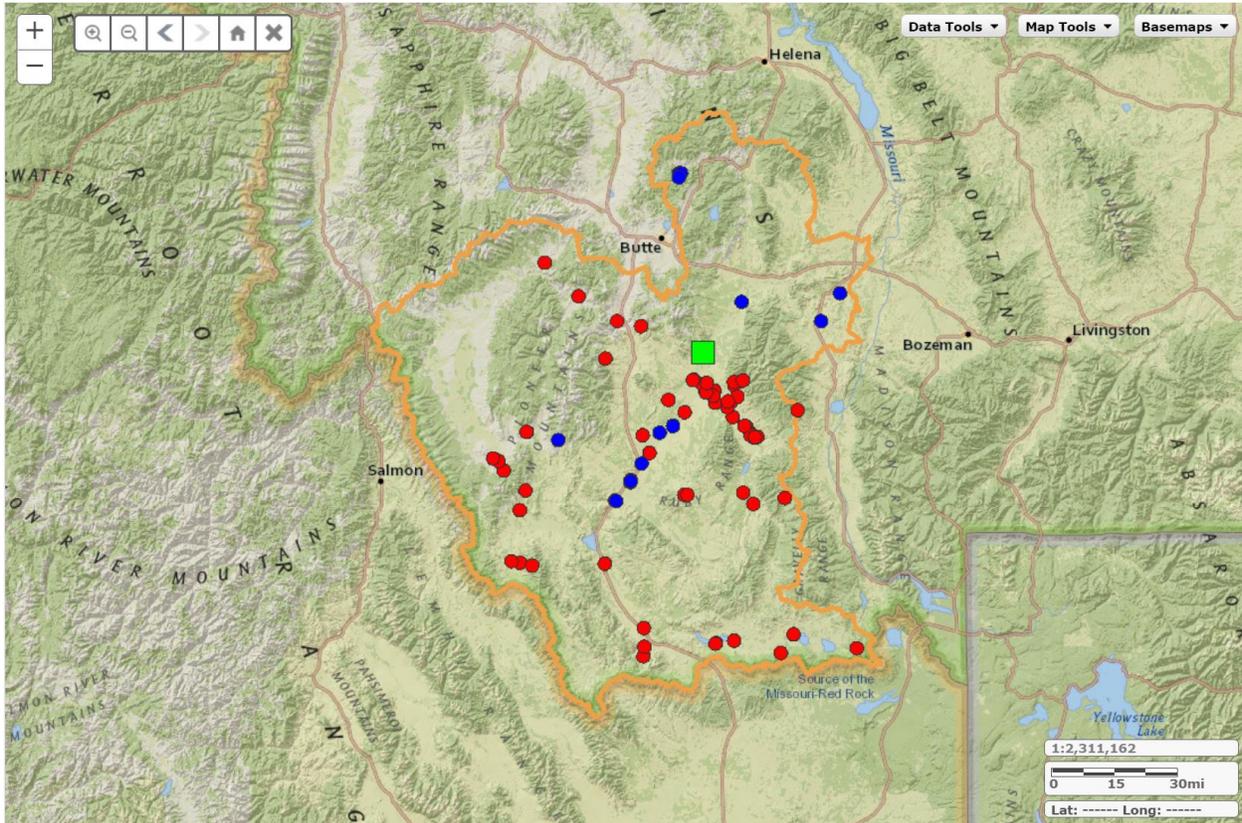


A review of DNRC’s water rights database includes a list of 18 junior water rights in the Jefferson, Beaverhead and Boulder River Basins. Each of the water rights were reviewed to determine if cessation of water use would likely result in additional flow reaching the Jefferson River and tributaries. The following table lists the water rights by purpose of use.

Purpose	Call	No Call	Flow Rate (cfs)
Lawn and Garden/Irrigation	2		0.09
Fish, Wildlife and Recreation	8	7	5.82
Mining	2		1.06
Stock		4	--
Power Generation		2	--
Totals	12	6	6.97

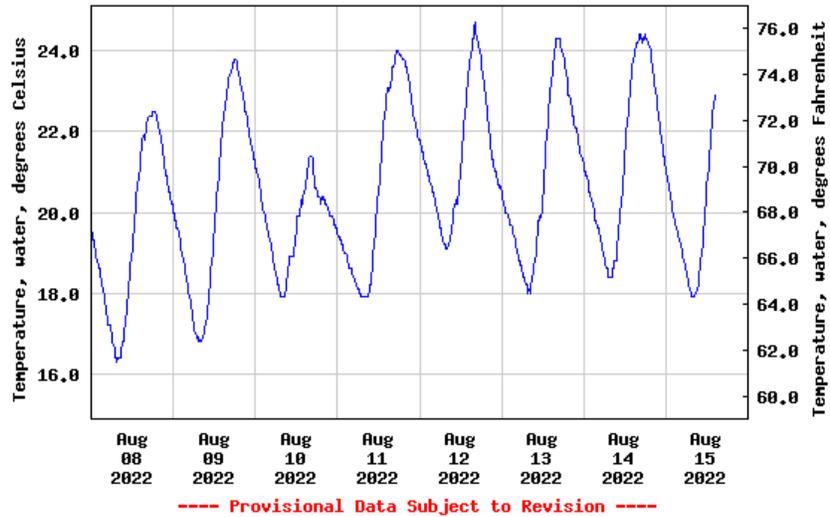
¹ Excluded because of conditions on permit.

The following map shows the location of all junior water rights. Those represented by blue dots would be called while those represented by red dots would not because of the low likelihood of improving flow in the river. The green square is the location of USGS Gage 06026500.



The Jefferson River and tributaries hold a stable wild trout fishery of both native and nonnative species. Dewatering and associated warm water temperatures can negatively impact the fishery. High-water temperatures and fragmented habitat can also increase acute stress, disease development and induce mortality. During high temperature periods, higher streamflow can counteract the effects of high temperature and improve fish survival by moderating water temperature and providing more deep pool habitat where fish can avoid higher water temperatures. The chart below shows maximum daily water temperatures at the Twin Bridges gage exceeding 73°F for several consecutive days. With higher temperatures forecasted, maximum daily water temperatures are expected to continue exceeding 73°F. Fishing restrictions are currently in place throughout the Jefferson River system to also help reduce stress and impact from high temperatures and low flow. A full fishing closure is in place for the entirety of the Jefferson River and the lower Big Hole River.

USGS 06026500 Jefferson River near Twin Bridges MT



USGS 06023100 Beaverhead River at Twin Bridges, MT

